

STATE OF SOUTH CAROLINA

(Caption of Case)

Integrated Resource Plan

BEFORE THE  
PUBLIC SERVICE COMMISSION  
OF SOUTH CAROLINA

## COVER SHEET

DOCKET

NUMBER: 2011 - 11 - E

(Please type or print)

Submitted by: Lockhart Power Company

SC Bar Number:

Address: P.O. Box 10

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Lockhart, S.C. 29364

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Other:

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NOTE: The cover sheet and information contained herein neither replaces nor supplements the filing and service of pleadings or other papers as required by law. This form is required for use by the Public Service Commission of South Carolina for the purpose of docketing and must be filled out completely.

## DOCKETING INFORMATION (Check all that apply)

☐ Emergency Relief demanded in petition☐ Request for item to be placed on Commission's Agenda expeditiously☐ Other:

INDUSTRY (Check one)	NATURE OF ACTION (Check all that apply)			
<input checked="" type="checkbox"/> Electric	<input type="checkbox"/> Affidavit	<input type="checkbox"/> Letter	<input type="checkbox"/> Request	
<input type="checkbox"/> Electric/Gas	<input type="checkbox"/> Agreement	<input type="checkbox"/> Memorandum	<input type="checkbox"/> Request for Certification	
<input type="checkbox"/> Electric/Telecommunications	<input type="checkbox"/> Answer	<input type="checkbox"/> Motion	<input type="checkbox"/> Request for Investigation	
<input type="checkbox"/> Electric/Water	<input type="checkbox"/> Appellate Review	<input type="checkbox"/> Objection	<input type="checkbox"/> Resale Agreement	
<input type="checkbox"/> Electric/Water/Telecom.	<input type="checkbox"/> Application	<input type="checkbox"/> Petition	<input type="checkbox"/> Resale Amendment	
<input type="checkbox"/> Electric/Water/Sewer	<input type="checkbox"/> Brief	<input type="checkbox"/> Petition for Reconsideration	<input type="checkbox"/> Reservation Letter	
<input type="checkbox"/> Gas	<input type="checkbox"/> Certificate	<input type="checkbox"/> Petition for Rulemaking	<input type="checkbox"/> Response	
<input type="checkbox"/> Railroad	<input type="checkbox"/> Comments	<input type="checkbox"/> Petition for Rule to Show Cause	<input type="checkbox"/> Response to Discovery	
<input type="checkbox"/> Sewer	<input type="checkbox"/> Complaint	<input type="checkbox"/> Petition to Intervene	<input type="checkbox"/> Return to Petition	
<input type="checkbox"/> Telecommunications	<input type="checkbox"/> Consent Order	<input type="checkbox"/> Petition to Intervene Out of Time	<input type="checkbox"/> Stipulation	
<input type="checkbox"/> Transportation	<input type="checkbox"/> Discovery	<input type="checkbox"/> Prefiled Testimony	<input type="checkbox"/> Subpoena	
<input type="checkbox"/> Water	<input type="checkbox"/> Exhibit	<input type="checkbox"/> Promotion	<input type="checkbox"/> Tariff	
<input type="checkbox"/> Water/Sewer	<input type="checkbox"/> Expedited Consideration	<input type="checkbox"/> Proposed Order	<input type="checkbox"/> Other: _____	
<input type="checkbox"/> Administrative Matter	<input type="checkbox"/> Interconnection Agreement	<input type="checkbox"/> Protest		
<input type="checkbox"/> Other: _____	<input type="checkbox"/> Interconnection Amendment	<input type="checkbox"/> Publisher's Affidavit		
	<input type="checkbox"/> Late-Filed Exhibit	<input checked="" type="checkbox"/> Report		

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June 30, 2011

THE HONORABLE JOCELYN BOYD  
Chief Clerk and Administrator  
South Carolina Public Service Commission  
101 Executive Center Drive  
Suite 100  
Columbia, South Carolina 29210

Docket No. 2011-11-E  
Order No. 94-348 & 98-502

Dear Jocelyn Boyd:

Pursuant to Docket No. 2011-11-E, Order No 94-348 & 98-502, please find enclosed for filing Lockhart Power Company's **INTEGRATED RESOURCE PLAN** dated June, 2011.

Very truly yours,

A handwritten signature in cursive script that reads "James H. Seay, Jr.".

James H. Seay, Jr.  
Manager – Engineering & Regulatory Affairs  
Lockhart Power Company  
Lockhart, SC 29364

# **LOCKHART POWER COMPANY**

## **INTEGRATED RESOURCE PLAN**

### **1. STATEMENT OF OBJECTIVE**

Lockhart Power Company's (LPC) objective in developing an Integrated Resource Plan (IRP) is to minimize our long run total costs and produce the least cost to our customers consistent with the availability of an adequate and reliable supply of electric energy while maintaining system flexibility and considering environmental impacts. We intend for the plan to also improve customer service, offer additional customer options, and improve efficiencies of energy usage.

### **2. RELEVANT SUPPORTING DOCUMENTATION**

#### **a. See ATTACHMENTS**

- 1 --- DEMAND FORECAST
- 2 --- SUPPLY AND SALES FORECAST
- 3 --- LOCKHART POWER COMPANY ENERGY SOURCES
- 4 --- CASH FLOW BREAK-EVEN TEST WORKSHEET

1       **3.       SUPPLY RESOURCES**

2

3       LPC presently utilizes five sources of supply --- Lockhart hydroelectric facility, Pacolet

4       hydroelectric facility, Lockhart's Diesel Generation facility in Pacolet, SC, Lockhart's

5       Diesel Generation facility in Union, SC, and purchases from Duke Energy . LPC

6       purchases approximately 80% of its total system input in MWH's. SEE ATTACHMENT

7       3. LPC uses its run-of-river hydro plant as a peaking unit through out the year. Duke

8       Energy's rates to LPC are presumptively just and reasonable, having been permitted by

9       the FERC. We plan to continue to use Duke Energy for the foreseeable future. However,

10      LPC intends to investigate other sources to determine if the costs and benefits, both short

11      run and long run, meet the objectives of our IRP. The sources we intend to investigate

12      include, but are not limited to the following:

13

14                               **GENERATION** ---   Additional Hydro for peak shaving.

15                               **PURCHASES** ---   Spot, Short Term, Long Term from present

16                               supplier to reduce supply cost. Spot, Short Term, Long Term from

17                               Independent Power Producers or Exempt Wholesale Generators to

18                               reduce supply cost.

19

20

21

22      **4.       VARIOUS ENERGY ALTERNATIVES, EFFICIENT ENERGY CHOICES AND**

23      **PROPER PRICING SIGNALS**

24      LPC has and continues to do the following:

25              A.       Designed its rates to economically encourage improved load factors and to

26                      reduce monthly demands by:

27                              1.       Incorporating a demand penalty by use of a demand ratchet

28                              in its resale rates. This encourages peak shaving.

2. Dividing its commercial and industrial rates into a first 200 hours use of billing demand rate and an over 200 hours use of billing demand rate with the rates in the latter considerably less expensive than the first 200 hours use block. This encourages peak shaving.
3. Incorporating stringent conservation requirements in its Residential - All Electric and General Service - All Electric rates. This encourages conservation.
4. Designing its Residential and Residential - All Electric rates such that they are identical during the summer months, the season of LPC's system peak. This encourages peak shaving and conservation.
5. Designing its General Service Commercial and General Service - All Electric rates such that they are identical during the summer months, the season of LPC's system peak. This encourages peak shaving and conservation.
6. Converting its Residential rate and Residential - All -Electric rate (summer months) from a declining block rate to an inverted rate. This encourages conservation.

## **5. EVALUATING POTENTIAL OPTIONS**

LPC will employ unbiased analysis techniques for potential options included in its IRP.

LPC will evaluate each option by including all appropriate costs and and benefits and will provide a detailed explanation with supporting evidence for our choice.

1       **6.     EVALUATING THE COST EFFECTIVENESS OF SUPPLY-SIDE AND**  
2       **DEMAND SIDE OPTIONS**

3  
4       LPC will evaluate the cost effectiveness of each supply-side and demand-side option by  
5       considering relevant costs and benefits. LPC will evaluate each option by the cash flow  
6       breakeven method. SEE ATTACHMENT 4. Worksheets will be used to show the detail  
7       for Columns 2, 3, 4, and 5. Savings and Environmental costs will be included as Added  
8       Net Sales or an Expense depending on the value developed for that particular item. If  
9       Column 13 shows that the project will take longer than six years to break even, the  
10      project will probably not be implemented.

11  
12  
13      **7.     MEASURE OF NET BENEFITS**

14      LPC will provide the net benefits resulting from the options chosen for use, keeping  
15      within the objective stated in 1. Benefits will be quantified on the Worksheets described  
16      in 6. above. Benefits are considered to be, but are not limited to, cost savings, peak load  
17      shaving, conservation, load shifting, valley filling, environmental concerns, improvement  
18      of customer service, offering of additional customer options, improved efficiencies of  
19      energy usage, and improved outage times and reliability.

20  
21  
22      **8.     ENVIRONMENTAL COSTS**

23  
24      LPC will consider environmental costs on a monetized basis where reasonable and  
25      sufficient data is available in its planning process and evaluation of options. Those  
26      environmental costs that cannot be monetized will be addressed on a qualitative basis  
27      within the planning process and evaluation of options. Environmental costs can be

increased or reduced. The environmental costs referred to here are those costs associated with demand or supply side options which impact the customer directly or indirectly.

#### **9. DEMAND AND ENERGY FORECAST**

SEE ATTACHMENTS 1 AND 2

#### **10. EVALUATION AND REVIEW OF EXISTING DEMAND-SIDE OPTIONS**

SEE 4. ABOVE

#### **11. FUTURE STUDIES**

LPC presently has no significant studies in progress.

#### **12. FLEXIBILITY AND QUICK RESPONSE**

LPC intends to remain flexible enough to react quickly to changes in a manner consistent with minimizing costs while maintaining reliability.

#### **13. MAINTENANCE**

Maintenance is a continuous process at LPC. Actual maintenance costs for 2009 and 2010 are shown below as well as the forecast of maintenance costs for 2011 through 2025.

<u>YEAR</u>	<u>MAINTENANCE COST</u>	<u>YEAR</u>	<u>MAINTENANCE COST</u>
2009	\$1,207,606	2018	\$1,595,803
2010	1,259,742	2019	1,643,677

1	2011	1,297,534	2020	1,692,987
2	2012	1,336,460	2021	1,743,777
3	2013	1,376,554	2022	1,796,090
4	2014	1,417,850	2023	1,849,973
5	2015	1,460,386	2024	1,905,472
6	2016	1,504,197	2025	1,962,636
7	2017	1,549,323		

8

9      **14.      THIRD PARTY POWER PURCHASES**

10            LPC will investigate other purchase sources if the occasion arises and is willing to pursue  
11            any other purchase sources to determine if the costs and benefits, both short run and long  
12            run, provide our customers with the options consistent with our IRP objective.

13

14

15      **15.      NEW TECHNOLOGIES**

16

17            LPC will continuously evaluate, pursuant to its IRP objective, new technology for both  
18            demand-side and supply-side options.

19

20      **16.      FUTURE SUPPLY-SIDE OPTIONS**

21

22            LPC presently has no certain scheduled supply side options other than those described in  
23            3.

24

25

26      **17.      CAPTURING LOST OPPORTUNITY RESOURCES**

27            LPC gives attention to capturing lost-opportunity resources which include cost-effective  
28            energy efficiency savings such as in new construction, renovation, and in routine



1 replacement of existing equipment. In routine replacement of any and all equipment,  
2 LPC includes energy and efficiency savings as a component of evaluation.  
3

#### 4 **18. DYNAMICS OF IRP PROCESS**

5

6 LPC realizes that the IRP process is dynamic and that modifications may be necessary  
7 over time. As new issues arise, existing issues or components of the plan change in  
8 significance and improved analysis techniques developed; LPC intends to file revisions to  
9 its IRP with The Public Service Commission of South Carolina and request that the  
10 Commission incorporate the revision into LPC's IRP or approve it as a separate  
11 consideration.

## LOCKHART POWER COMPANY

DOCKET NO. 2011-11-E  
ORDER NO. 94-348 & 98-502

## SUMMER DEMAND FORECAST

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>SYSTEM SUMMER PEAK DEMAND IN MW'S</b>															
SYSTEM PEAK DEMAND	70.8	71.5	72.2	72.9	73.7	74.4	75.2	75.9	76.7	77.4	78.2	79.0	79.8	80.6	81.4
<b>DEMAND SOURCES</b>															
LOCKHART HYDRO GENERATION	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
PACOLET HYDRO GENERATION	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
PACOLET DIESEL GENERATION	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
UNION DIESEL GENERATION	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
PURCHASES FROM DUKE ENERGY	40.9	41.6	42.3	43.0	43.8	44.5	45.3	46.0	46.8	47.5	48.3	49.1	49.9	50.7	51.5
TOTAL DEMAND SOURCES	70.8	71.5	72.2	72.9	73.7	74.4	75.2	75.9	76.7	77.4	78.2	79.0	79.8	80.6	81.4

## WINTER DEMAND FORECAST

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>SYSTEM WINTER PEAK DEMAND IN MW'S</b>															
SYSTEM PEAK DEMAND	65.7	66.4	67.0	67.7	68.4	69.1	69.7	70.4	71.1	71.9	72.6	73.3	74.0	74.8	75.5
<b>DEMAND SOURCES</b>															
LOCKHART HYDRO GENERATION	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
PACOLET HYDRO GENERATION	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
PACOLET DIESEL GENERATION	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
UNION DIESEL GENERATION	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
PURCHASES FROM DUKE ENERGY	35.8	36.5	37.1	37.8	38.5	39.2	39.8	40.5	41.2	42.0	42.7	43.4	44.1	44.9	45.6
TOTAL DEMAND SOURCES	65.7	66.4	67.0	67.7	68.4	69.1	69.7	70.4	71.1	71.9	72.6	73.3	74.0	74.8	75.5

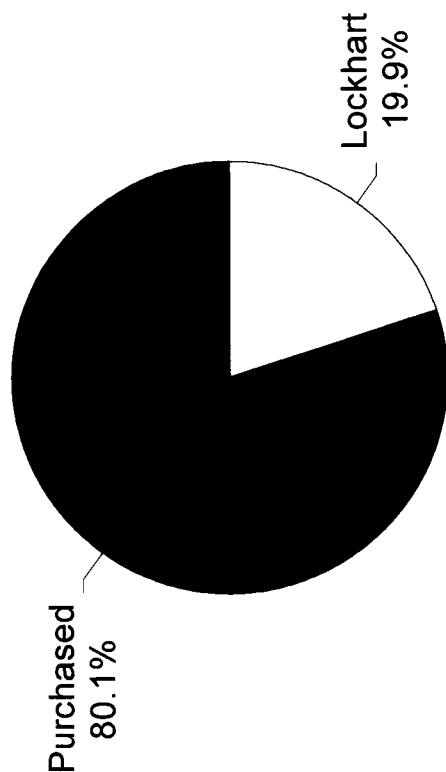
## LOCKHART POWER COMPANY

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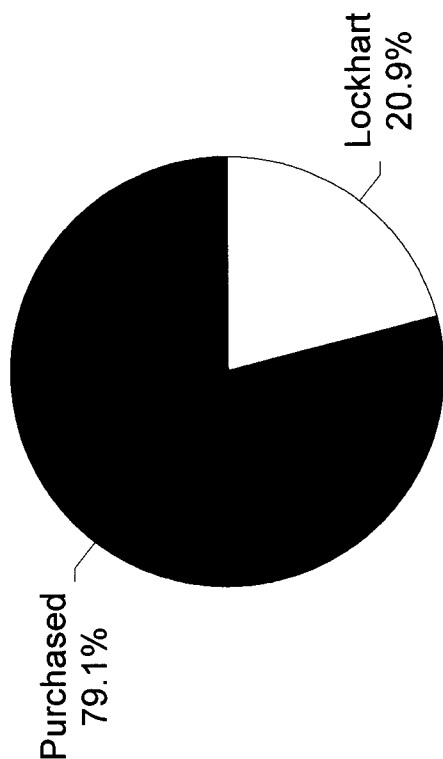
## SUPPLY AND SALES FORECAST (MWH)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>System Requirements</b>															
Metered Sales	335,581	338,937	342,326	345,749	349,207	352,699	356,226	359,788	363,386	367,020	370,690	374,397	378,141	381,922	385,742
Company Use	642	642	642	642	642	642	642	642	642	642	642	642	642	642	642
Losses	19,703	19,900	20,099	20,300	20,503	20,708	20,915	21,124	21,336	21,549	21,764	21,982	22,202	22,424	22,648
Required System Input	355,926	359,479	363,067	366,691	370,352	374,049	377,783	381,555	385,364	389,211	393,097	397,021	400,985	404,988	409,032
<b>Supply Sources</b>															
Lockhart Hydro Generation	66841	66841	66841	66841	66841	66841	66841	66841	66841	66841	66841	66841	66841	66841	66841
Pacolet Hydro Generation	3234	3234	3234	3234	3234	3234	3234	3234	3234	3234	3234	3234	3234	3234	3234
Pacolet Diesel Generation	366	366	366	366	366	366	366	366	366	366	366	366	366	366	366
Union Diesel Generation	498	498	498	498	498	498	498	498	498	498	498	498	498	498	498
Purchases from Duke	284,987	288,540	292,128	295,752	299,413	303,110	306,844	310,616	314,425	318,272	322,158	326,082	330,046	334,049	338,093
Total Supply	355,926	359,479	363,067	366,691	370,352	374,049	377,783	381,555	385,364	389,211	393,097	397,021	400,985	404,988	409,032

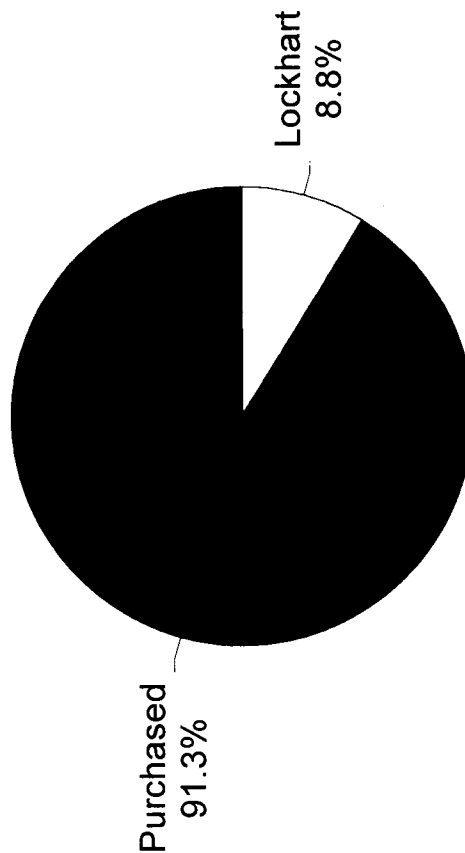
# ENERGY SOURCES IN PERCENT OF MWH'S INPUT



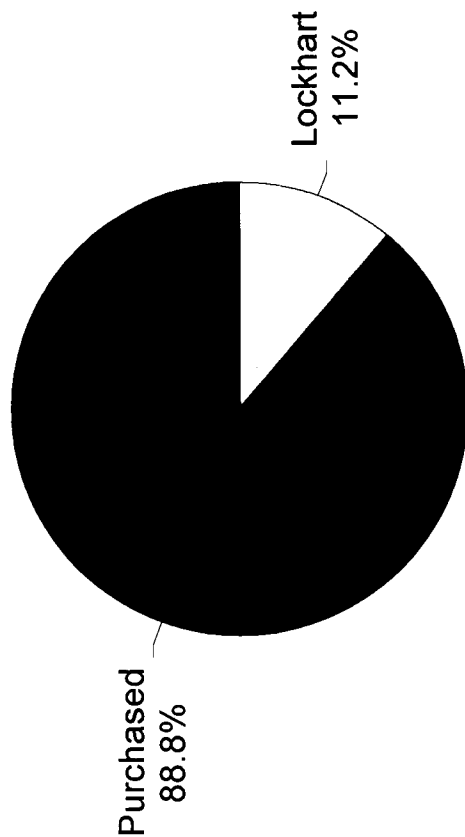
2010



2009



2008



2007

Note: Purchased Power obtained from Duke Energy

## Attachment 4

[illegible]